

ABSTRACT

Aluminum nitride powder, aluminum nitride platelets, powdered solid solutions of aluminum nitride and at least one other ceramic material such as silicon carbide, and composites of aluminum nitride and transition metal borides or carbides are prepared by combustion synthesis at low gaseous nitrogen pressures. Porous bodies of aluminum nitride or composites of aluminum nitride and transition metal borides or carbides are also prepared by combustion synthesis at these pressures. The porous bodies are suitable for infiltration, either as formed or after being coated with at least one layer of a silicate material, by polymers or metals.